

RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1: RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 focus on Exponents and provide detailed answers and explanations for various problems.

This exercise introduces students to the rules and properties of exponents, including how to simplify expressions involving powers and solve problems related to exponential notation.

Each solution is presented step-by-step helping students understand the concepts clearly and apply them effectively.

By working through this exercise, students can build a strong foundation in handling exponents which is important for solving more complex mathematical problems.

RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 Overview

RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 are prepared by subject experts from Physics Wallah.

The solutions break down each step, making it easy for students to understand the rules and properties of exponents. By following these expert-prepared solutions, students can effectively grasp how to simplify expressions and solve problems involving exponential notation.

Class 8 Maths Chapter 2 Exercise 2.1 RS Aggarwal Solutions

In this chapter, students will explore topics such as the standard form of exponents, laws of exponents, and how to compare numbers using exponents. The chapter is divided into three exercises: Exercise 2A, 2B, and 2C, with a total of 37 practice questions. Exercise 2A is particularly straightforward, consisting of 13 questions that focus on the multiplication and division of exponential numbers.

- Powers with Negative Exponents: For example, $4^{-2} = \frac{1}{4^2} = \frac{1}{16}$.
- Laws of Exponents: Rules for simplifying expressions with exponents.
- Expressing Small Numbers Using Exponents: For instance, representing numbers in their standard form.

This resource is designed to help Class 8 students build a solid foundation in exponents, which will be beneficial for more advanced mathematical studies in future classes.

RS Aggarwal Solutions for Class 8 Maths Chapter 2

Exercise 2.1 PDF

The PDF link for RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 is available below. This PDF provides detailed explanations for problems related to exponents, focusing on multiplication and division of exponential numbers.

The solutions are designed to help Class 8 students grasp these fundamental concepts and apply them effectively. By downloading this PDF students can benefit from expert-prepared answers that clarify complex topics, making it a valuable resource for exam preparation and improving their overall understanding of the chapter.

RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 PDF

RS Aggarwal Solutions for Class 8 Maths Chapter 2

Exponents Exercise 2.1

Here we have provided RS Aggarwal Solutions for Class 8 Maths Chapter 2 Exercise 2.1 to help students in their exam preparation. These solutions provide detailed explanations and step-by-step guidance on problems related to exponents, helping students understand the concepts thoroughly.

By using these solutions, students can practice effectively, clarify their doubts, and improve their understanding of exponents, which will be beneficial for achieving better results in their exams.

(1) Evaluate

Solution:

$$(i) 4^{-3} = \left(\frac{1}{4}\right)^3 = \frac{1^3}{4^3} = \frac{1}{64}$$

$$(ii) \left(\frac{1}{2}\right)^{-5} = \left(\frac{2}{1}\right)^5 = 2^5 = 32$$

$$(iii) \left(\frac{4}{3}\right)^{-3} = \left(\frac{3}{4}\right)^3 = \frac{3^3}{4^3} = \frac{27}{64}$$

$$(iv) (-3)^{-4} = \left(\frac{-1}{3}\right)^4 = \frac{(-1)^4}{3^4} = \frac{1}{81}$$

$$(v) \left(\frac{-2}{3}\right)^{-5} = \left(\frac{-3}{2}\right)^5 = \frac{(-3)^5}{2^5} = \frac{-243}{32}$$

(2) Evaluate

Solution:

$$(i) \left(\frac{5}{3}\right)^2 \times \left(\frac{5}{3}\right)^2 = \left(\frac{5}{3}\right)^{2+2} = \left(\frac{5}{3}\right)^4 = \frac{5^4}{3^4} = \frac{625}{81}$$

$$(ii) \left(\frac{5}{6}\right)^6 \times \left(\frac{5}{6}\right)^{-4} = \left(\frac{5}{6}\right)^{6-4} = \left(\frac{5}{6}\right)^2 = \frac{5^2}{6^2} = \frac{25}{36}$$

$$(iii) \left(\frac{2}{3}\right)^{-3} \times \left(\frac{2}{3}\right)^{-2} = \left(\frac{2}{3}\right)^{-3-2} = \left(\frac{2}{3}\right)^{-5} = \left(\frac{3}{2}\right)^5 \cdot 8 = \frac{3^5}{2^5} = \frac{243}{32}$$

$$(iv) \left(\frac{9}{8}\right)^{-3} \times \left(\frac{9}{8}\right)^2 = \left(\frac{9}{8}\right)^{-3+2} = \left(\frac{9}{8}\right)^{-1} = \frac{8}{9}$$

(3) Evaluate

Solution:

$$\begin{aligned}
 \text{(ii)} \quad & \left(\frac{-3}{5}\right)^{-4} \times \left(\frac{-2}{5}\right)^2 \\
 &= \left(\frac{-5}{3}\right)^4 \times \left(\frac{-2}{5}\right)^2 \\
 &= \frac{(-5)^4}{3^4} \times \frac{(-2)^2}{5^2} \\
 &= \frac{625}{81} \times \frac{4}{25} = \frac{100}{81}
 \end{aligned}$$

(4) Evaluate

Solution:

$$\text{(i)} \quad \left\{\left(\frac{-2}{3}\right)^2\right\}^{-2} = \left\{\frac{(-2)^2}{3^2}\right\}^{-2} = \left\{\frac{4}{9}\right\}^{-2} = \left(\frac{9}{4}\right)^2 = \frac{9^2}{4^2} = \frac{81}{16}$$

$$\text{(ii)} \quad \left[\left\{\left(\frac{-1}{3}\right)^2\right\}^{-2}\right]^{-1} = \left[\left\{\frac{(-1)^2}{3^2}\right\}^{-2}\right]^{-1} = \left[\left\{\frac{1}{9}\right\}^{-2}\right]^{-1} = [9^2]^{-1} = \left(\frac{1}{9^2}\right)^1 = \frac{1}{81}$$

$$\text{(iii)} \quad \left\{\left(\frac{3}{2}\right)^{-2}\right\}^2 = \left\{\left(\frac{2}{3}\right)^2\right\}^2 = \left\{\frac{4}{9}\right\}^2 = \frac{16}{81}$$

(5) Evaluate

$$\left\{\left(\frac{1}{3}\right)^{-3} - \left(\frac{1}{2}\right)^{-3}\right\} \div \left(\frac{1}{4}\right)^{-3}$$

$$= \{3^3 - 2^3\} \div 4^3$$

$$= (27 - 8) \div 64$$

$$= 19 \times \frac{1}{64} = \frac{19}{64}$$

(6) Evaluate

Solution:

$$\left\{\left(\frac{4}{3}\right)^{-1} - \left(\frac{1}{4}\right)^{-1}\right\}^{-1}$$

$$= \left\{\left(\frac{3}{4}\right)^1 - 4^1\right\}^{-1}$$

$$= \left\{\frac{3-16}{4}\right\}^{-1} = \left(\frac{-13}{4}\right)^{-1} = \frac{-4}{13}$$

(7) Evaluate

Solution:

$$[(5^{-1} \times 3^{-1})^{-1} \div 6^{-1}]$$

$$= \left[\frac{1}{5} \times \frac{1}{3} \right]^{-1} \div \frac{1}{6}$$

$$= 15 \times 6 = 90$$

(8) Find the value of

Solution:

$$(i) (2^0 + 3^{-1}) \times 3^2$$

$$= \left(1 + \frac{1}{3}\right) \times 9$$

$$= \left(\frac{3+1}{3}\right) \times 9$$

$$= \frac{4}{3} \times 9 = 12$$

$$(ii) (2^{-1} \times 3^{-1}) \div 2^{-3}$$

$$= \left(\frac{1}{2} \times \frac{1}{3}\right) \div \left(\frac{1}{2}\right) 4^3$$

$$= \frac{1}{6} \times 8 = \frac{4}{3}$$

$$(iii) \left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}$$

$$= 2^2 + 3^2 + 4^2$$

$$= 4 + 9 + 16 = 29$$

(9) Find the value of x for which

Solution:

$$\left(\frac{5}{3}\right)^{-4} \times \left(\frac{5}{3}\right)^{-5} = \left(\frac{5}{3}\right)^{3x}$$

$$\therefore 3x = -4 - 5$$

$$\text{or, } x = \frac{-9}{3} = -3$$

(10) Find the value of x for which

Solution:

$$\left(\frac{4}{9}\right)^4 \times \left(\frac{4}{9}\right)^{-7} = \left(\frac{4}{9}\right)^{2x-1}$$

$$\therefore 2x - 1 = 4 - 7$$

$$\text{or, } 2x = -3 + 1$$

$$\text{or, } x = \frac{-2}{2} = -1$$

(11) By what number should $(-6)^{-1}$ be multiplied so that the product becomes 9^{-1} ?

Solution: Let the required number be x . then,

$$x \times (-6)^{-1} = 9^{-1}$$

$$\text{or, } x \times \frac{(-1)}{6} = \frac{1}{9}$$

$$\text{or, } x = \frac{1}{9} \times (-6) = \frac{-2}{3}$$

(13) If $5^{2x+1} \div 25 = 125$, find the value of x .

$$5^{2x+1} \div 25 = 125$$

$$\text{or, } 5^{2x+1} \div 5^2 = 5^3$$

$$\text{or, } \frac{5^{2x+1}}{5^2} = 5^3$$

$$\text{or, } 2x + 1 - 2 = 3$$

$$\text{or, } 2x - 1 = 3$$

$$\text{or, } 2x = 3 + 1$$

$$\text{or, } x = \frac{4}{2} = 2$$

Benefits of RS Aggarwal Solutions for Class 8 Maths

Chapter 2 Exercise 2.1

- **Detailed Explanations:** Each solution is broken down into clear step-by-step instructions, helping students understand the process of solving problems involving exponents.
- **Concept Clarity:** The solutions provide a thorough understanding of the rules and properties of exponents ensuring that students grasp these fundamental concepts effectively.
- **Practice and Application:** By working through the exercise, students get ample practice with different types of exponent problems, which strengthens their problem-solving skills.
- **Error Correction:** The detailed solutions help students identify and correct mistakes in their work, improving accuracy and confidence.
- **Exam Preparation:** The solutions are aligned with the curriculum aiding in focused preparation for exams by familiarizing students with the format and types of questions they might encounter.

